Frankly Speaking

"An Organization for the Promotion of Learning"

FROM TIME TO TIME we should take stock to see where we stand and where we are going. Just what is the Institute of Traffic Engineers and what are its objects? By definition, an Institute is ". . . an organization for the promotion of learning . . ." Our Institute was founded with this concept in mind; to promote the understanding of traffic engineering principles and techniques and to advance the knowledge of all men engaged in this work. The membership is composed of professionals engaged in both public and private work but with the common objective of developing ways and means of obtaining safer and more efficient street and highway transportation.

"Promotion of learning" comes through research, exchange of knowledge, training, and discussion with those in the same or related fields of endeavor. If the "promotion of learning" is to be truly widespread among all those concerned with safe and efficient highway transportation, then the Institute must make its pool of knowledge available to all segments of this broad field. The traffic engineer can supply the factual data of driver behavior, vehicle operation and road use. He can develop ways and means of getting the best use from existing facilities. He can measure present and future traffic demands. But these data and this knowledge are also tools of the administrator, the designer, the planner and the maintenance engineer. Only when these tools are used by all those engaged in highway work will we truly get a united attack on the problems of safety, economy and convenience in highway transportation.

Highway transportation is no respector of political subdivisions. Urban streets and rural highways are all the same to the road user in terms of wanting safe, convenient, congestion-free routes of travel between points of origin and destination.

As traffic volumes have increased and accidents and congestion have mounted to the detriment of the road user and business man alike there has come into being a group of specialists known as traffic engineers who have devoted their attention to the operational problems just as the designer, construction and maintenance engineer have devoted their main attention to improving their techniques to cope with these expanding problems. All have one common interest; to provide the best possible highway transportation service.

Problems so diverse as those involving the proper design, location or operation of control devices and those involving the supplying of information for the planning and design of urban expressways require a broad base of knowledge and interest. Is it not then, one of the functions of the Institute of Traffic Engineers to provide a forum or distribution medium for an exchange of ideas and knowledge in the "promotion of learning" how best to provide the most efficient and the safest possible highway transportation system for all of the users?

D. Grant Mickle

Member, Board of Direction

Vehicular Speed Surveys in France and Germany

by RICHARD WILSON, *Member I.T.E.**

Almost everyone who has been in Paris has been greatly impressed by the apparent reckless driving of the native Frenchman. This was particularly noticeable during the first winter after the invasion when a speed limit of 20 miles per hour for the streets of Paris had been established by our military forces. Although this speed regulation was strictly enforced by the military police as far as military personnel was concerned, they had no jurisdiction over the speed of civilian drivers' vehicles.

Lt. Col. Charles E. Day, then Chief of the Traffic Branch, Military Police Division, decided to determine the speeds of civilian and military vehicles in and around Paris with the thought of persuading the local authorities to establish and enforce speed restrictions which were commensurate with those established by our own military authorities.

PW's Make Eno-Boxes

Proceeding with the speed survey, we found that no equipment for making the speed checks was readily available so it was decided to make "flash boxes" or Enoscopes. These were made by German PWs through the courtesy of the 1469th E. M. Engineer Company. Camera tripods were furnished by the Signal Corps and the stop watches by Ordnance.

The first check was made in May 1945 on Avenue De Tokio, which was subsequently changed to Avenue De New York. Other checks were made on Boulevard Raspail, across the Left Bank and on Avenue De La Grande Armee on the opposite side of the Arc de Triomphe from Champs Elysees. Two other checks were made outside of metropolitan Paris where the 20-mile speed restriction was not in force. One of these was on Route N3, three miles north of Porte de Pantin and the other on Route N192, 2-½ miles northeast of Colombes.

Following are the results of these speed checks which include both U. S. Army and civilian vehicles:

Station	Date	No. Vehicles Observed			Average Speeds MPH		
		U. S.	Civil	Total	Total	U. S.	Civil.
Ave. De Tokio	24/5/45	80	170	250	30.4	27.4	31.5
Blvd. Raspail	26/5/45	74	126	200	24.9	22.7	26.0
Ave. De La Grande Armee	7/6/45	71	129	200	26.2	23.1	29.0
Rt. N3-N. of Pontin	30/5/45	78	172	250	34.4	35.8	31.9
Rt.N192-NW of Colombes	2/6/45	19	181	200	35.8	37.1	35.7
		322	778	1100	30.2	28.3	31.5

* Mr. Wilson was a civilian traffic engineer with the U. S. Army in Europe, assigned to the Theatre Provost Marshall's Office. He is now a traffic engineer with the California Division of Highways.

Charcoal Burners Slow

Results of the speed checks showed the *average speed* of the civilian vehicles was but 3.2 miles greater than U. S. Army vehicles. This was partly explained by the fact that army trucks were able to make much better time than the charcoal burning heavy trucks of the French civilians.

The tally sheets for these speed checks were made up to include the various types of army and civilian vehicles. Following is a breakdown of the average speeds of these various types of vehicles and the number of the various types observed:

TYPES	Average Speed MPH	No. Observed
U. S. Army		
¼ ton (jeeps)	28.0	129
Weapon carriers	26.6	60
Command and reconnaissance	28.9	24
Sedans	34.6	15
Ambulances	27.3	6
Motorcycles	39.6	13
1-½ tons	27.1	8
2-½ tons	27.2	52
Over 2-½ tons	27.2	18
		325
Civilian Vehicles		
Sedans	34.3	451
Light trucks	29.0	138
Heavy trucks	26.1	139
Motorcycles	28.1	47
		775

Further analysis of the tally sheets showed the following speeds for passenger vehicles and trucks. For this analysis only jeeps, command cars and sedans were considered as passenger cars and motorcycles were not included in either group.

AVERAGE SPEEDS MPH

U. S. Army Vehicles		Civilian Vehicles	
Passenger Cars	Trucks	Passenger Cars	Trucks
28.6	26.9	34.0	24.1

The average speed of the upper 15 per cent; that is, those vehicles driven above the critical speed showed the Army vehicles averaging 43.4 miles per hour and the civilian vehicles averaging 48.1 miles per hour. Only four Army vehicles were clocked at a speed of 60 MPH while 20 civilian vehicles were checked at that speed, with two at 75 MPH. During the survey, twice as many civilian vehicles were observed as U. S. vehicles, but with a ratio of over 15 civilian to one U. S. vehicle hitting *top speeds;* it is small wonder that the "speeding" of the native Frenchman was so noticeable the first year our armed forces were in Paris.

In September of 1945 speed checks were made in Frankfurt and vicinity.

Following are the results:

Station	Date	No. Vehicles Observed			Average Speeds MPH		
		U. S.	Civil	Total	Total	U. S.	Civil.
1 (a) Reuter Way at Gartner	22/7/45	277	23	300	27.8	27.9	27.4
1 (b) Reuter Way at Gartner	25/9/45	187	33	200	33.7	33.6	28.1
2. Eschargheimer at Voeleker	25/9/45	236	14	250	26.8	27.0	23.3
3. Hohenzollern at Beethoven	25/4/45	178	72	250	30.5	30.4	30.9
4. Rte. N.40&NB at Y74	24/9/45	203	47	250	41.3	42.5	36.5
5. Autobahn, 6 mi. S. of Frankfurt	21/9/45	157	43	200	44.9	52.8	37.4
6. Rte. N3, 5 mi. S. of Frankfurt	24/9/45	97	81	178	39.4	42.2	36.1
		1315	313	1628	34.9	35.1	33.1

Stations 1(a) and 1(b) were at the same location but the checks were made at different hours. One was made between the hours of 0637 and 0835 when traffic was light; the other between the hours of 1925 and 1125 when traffic was heavier.

Speeds Higher in Germany

Station 2 was in the "Compound" near the Farben Building which accounts for the few civilian vehicles. The first three locations were all within Frankfurt where the truck speed limit was 20 MPH and passenger cars and light trucks were restricted to 25 MPH. Army jeeps and passenger cars were restricted to a speed of 40 MPH at locations 4, 5, and 6, which accounts for the higher average speeds. Locations 4 and 5 were on highways surfaced with Portland cement concrete and heavily traveled by military vehicles. Location 6 was on a cobblestone paved highway where civilian vehicles were approximately as numerous as military vehicles. There was very little variation in the average speeds of civilian vehicles. Top speeds of 75 MPH (6 observed) were noted on the *Autobahn*; all were military vehicles. Five civilian vehicles were clocked at 60 MPH while 22 military vehicles were observed at the same speed, also on the Autobahn.

It is interesting to note that the average speeds of both military vehicles and civilian vehicles were considerably higher in Germany than in France. Some reasons for this were better highways, better vehicles and less congestion.

EL PASO DEPRESSES TRACKS

City of El Paso has voted a two million dollar bond issue as its share of a five million dollar track depression project. The city is now bisected by the railroad tracks which cross all major traffic arteries, as well as the downtown section, at grade.

The Airphibian

by GEO. J. FISHER, *Associate Technical Editor,*
Assistant Traffic Engineer, Ohio Dept. of Highways

A new freedom of transportation has been inaugurated by Mr. Robert E. Fulton Jr., President of Continental Incorporated, a Danbury, Connecticut, concern. Mr. Fulton has introduced a vehicle which is neither earthbound nor skybound but which makes available the advantages of both. Thus the AIRPHIBIAN has been born.

The AIRPHIBIAN is airborne by a 3-bladed propeller and a high wing with flaps and slots, has four-wheeled landing gear, and cruises 400 miles at 110 miles per hour with two passengers and 100 pounds of baggage. On the ground it is of convertible coupe design with recommended maximum speed of 45 miles per hour and travels 25 miles on a gallon of gasoline.

Mr. Fulton proposes to manufacture the auto-airplane for a public willing to pay from $4500 to $5000, the estimated selling price, for an air and ground vehicle. One of his main objectives is to eliminate an inconvenience of air transportation, that of getting from an airport into town.

After having landed, inventor Robert E. Fulton, Jr., completely detaches AIRPHIBIAN from flight to ground condition in approximately 5 minutes. Propeller is removed in about 90 seconds and is then placed on a fixture on side of fuselage where it is locked to prevent harmful tampering.

The gull-like wings and high tail of the AIRPHIBIAN combine to present a craft capable of cruising well over 100 miles per hour. Windshield wiper may be seen in this picture.

Drives to Airport

With the AIRPHIBIAN, the owner drives to the airport in a vehicle having a power plant larger than that of a heavy automobile and equipped with a speedometer, two-way radio, windshield wiper, horn, safety glass, two spare tires, parking lights, tail light, stop light, combination headlights and landing lights, rear vision mirror, foot and hand brakes, bumper and other necessary and convenient accessories.

The roadway clearance between axle and pavement is about the same in the AIRPHIBIAN as in the case of any other automobile. Its turning radius is likewise comparable. The power is applied to the rear axle and the vehicle has an overall size of seven by four and one-half feet.

At the airport the wings, fuselage and empennage are attached as one assembly and the propeller is securely fastened into place. This all can be done in about five minutes according to Mr. Fulton and the automobile is ready to fly.

Upon returning from an air trip the wings, fuselage and empennage come off as one assembly and the propeller is easily removed and locked onto the fuselage. The airplane again becomes an automobile affording transportation over the streets and highways at a moderate speed.

In case of an accident, it is believed by Mr. Fulton, that the occupants in an AIRPHIBIAN would be at no particular disadvantage. The width between wheels gives greater stability and places the occupants in a far better position than in the smaller cars. Construction of the driving unit is also much stronger than the fuselage of the average airplane. Shatter-proof windows throughout minimize injury from that cause.

In designing the AIRPHIBIAN,

particular attention was devoted to forward visibility in both flight and driving conditions. According to "vision-line" tests made by the manufacturers, the AIRPHIBIAN provides for better view of the road in front than any other car.

Forward Step

Mr. Fulton maintains that "The primary drawback to real utility in private flying is the lack of ground transportation after landing. The AIRPHIBIAN affords its owner complete independence of travel, both in the air and on the ground. It is, we believe, the most important forward step presently being made in the field of private transportation (as opposed to common carriers). It is the first practical step in the new age of 'airphibious' travel, and its success in being entirely practical is due largely to the fact that it creates no new or special traffic problems either on the ground or in the air. A properly designed airphibious vehicle should fit, without difficulty, into already existent air and highway regulations."

Traffic Congestion Can Be Solved

by LESLIE WILLIAMS, *Member, I.T.E.*
City Planning and Traffic Engineer, American Transit Association

The most pressing problem facing traffic engineers today is the incessant demand from cities all over the nation for help in solving their traffic congestion problems.

A good place to start is with the "circulatory system" of the city because it has been demonstrated in many cities that much can be done through traffic engineering paliatives to get the best use out of existing streets, parking facilities, and public passenger carriers. These traffic engineering measures will have the difficult job of making the business district more readily accessible and a more pleasant place to shop and do business.

Although the time is fast approaching when major street changes and additional off-street parking facilities will be necessary this should come only after full use has been made of existing facilities. There lies the job of the traffic engineer.

Field observations of traffic conditions in various cities have revealed the following:

The Typical Traffic Situation

Most cities are not blessed with wide streets and the typical narrow streets are artificially further narrowed and corroded in many places with curb parking which slows down traffic and slows up the operation of the intersections which are the traffic valves and distributors.

Traffic generally reaches the morning peak about 8:30 A.M. Around mid-day and early afternoon, parking congestion becomes very evident. Vehicular movement is mostly of the short-haul type, probably motorists looking for parking spaces.

After 3:00 P.M. movement of vehicles begins to build up and reaches a flood wave about 4:30 P.M. with the crest coming about ten minutes after 5:00 P.M. The crest maintains itself from ten to fifteen minutes and then drops off sharply.

During this 5 o'clock peak, street space is at a premium for the movements of pedestrians and vehicles. Unfortunately, a small fraction of motorists appropriate more than their fair

share of limited street space by double-parking and delay the movement of the majority of motorists. In addition, the public carriers, with their heavy loads of people, are also seriously delayed—consequently, the acute rush hour congestion.

"All Rolling" Regulations

One of the best ways to reduce this rush hour congestion is to institute "all rolling" regulations—that is, no standing or parking at the curbs on streets within and leading from the business districts between 4:00 P.M. and 6:00 P.M. This "all rolling" method has proved effective in a number of cities including Chicago, Los Angeles, Dallas, St. Louis, Providence and Boston but its effectiveness is directly dependent on the degree of police enforcement of the regulation. If only one car stops at the curb, it completely blocks one entire street lane from "all rolling" use.

However, the intersection is the key to traffic movement. It is the traffic valve and unless operated effectively will form the bottleneck even on express highways built at millions of dollars a mile.

A left-turning car is equivalent to five cars moving straight through an intersection. Therefore, the fewer the left turns, the smoother and swifter is traffic movement. This is particularly important in rush hours.

The stationing of police officers at intersections to control traffic emphasizes the importance of these "hot spots" and also the officers.

Officer Control

Field observations have indicated a large differential in officer control at several inter-related downtown intersections. Controlling traffic by officers at intersections is a team-work job, and all officers stationed at these "hot spots" should have the highest training in expediting the traffic at his particular intersection and coordinating his efforts with those of officers at adjacent intersections. Young men, especially trained, prove more proficient in these posts, especially when working with a pre-timed mechanical traffic device.

Modernize Signals

Traffic signals are another engineering problem. In most cities, signals are timed on a standard signal cycle, and sometimes a waste shows. Traffic signals should be modernized to give consideration to the timing to meet inbound and outbound volumes in the A.M. and P.M. traffic periods.

Modernization of traffic signals would permit the installation of special devices for left and right hand turns and straight-through arrows at certain intersections.

Curb Parking Slows Traffic

Curb parking is perhaps the biggest factor in slowing down the movement of vehicles. During business hours, traffic speeds are enerously slow. A spot speed study in one city showed the overall speed in the central business district to be below five miles per hour or almost as slow as the average person walks.

While major delays almost invariably occur at the intersections, nevertheless a number of delays result from cars parking at the curb slowing down traffic movement. To overcome this, most cities will soon be faced with the adoption of curb parking projects similar to those adopted by Philadelphia, St. Louis, Cincinnati and other large cities.

One-Way Streets

A one-way street system, especially where streets are narrow, has proved beneficial to business and traffic movement in several cities. One way movement reduces the complications at intersections, facilitates the timing of traffic signals, speeds up traffic and increases the capacity of streets.

Unnecessary Travel Bypassed

The by-passing of traffic which has

no desire to be in the business district will permit the siphoning off of additional traffic volumes that now clog downtown streets. Street routes should be reviewed with the object of bypassing especially heavy truck movements away from the business area. The opportunities from this treatment will become evident from an origin and destination study.

Customers, Not Cars

Although the above remedies will help to ease traffic congestion to a certain extent, the crux of the problem revolves about moving people, instead of vehicles. The average business man cares little about how many automobiles pass his door each day, but he is vitally interested in how many people pass his shop because upon these people depends the prosperity of his business.

Mrs. Dorothy M. Lee, Public Utility Commissioner of Portland, Oregon, summed up the problem neatly when she said recently:

"It should be borne in mind that traffic congestion can be relieved in direct proportion to the number of people who will discontinue using private automobiles and substitute the mass transportation system when coming into town. The more acceptable the mass transportation vehicles are to them, the more apt they are to use them, and riders generally seem to prefer electric trackless trolleys to motor buses."

Traffic engineers can help in moving vehicles, but until city officials and public transportation companies undertake a widespread modernization and public education program, the traffic congestion problem can never be completely solved.

TRAFFIC VOLUME REACHES ALL-TIME HIGH

The predicted post-war increase in traffic volume is taking place at an even greater rate than previously estimated, according to a release by the Public Road Administration in their January Informational Memorandum on Traffic Volume Trends. The memorandum states that "On the basis of *preliminary figures*, rural traffic during 1946, the first postwar year, climbed to an all-time high of approximately 170,000,000 vehicle miles from a wartime low of 101,154 million vehicle-miles in 1943. The previous high of 169,806 million vehicle-miles established in 1941 was apparently exceeded slightly."

The report continues, "since the war, the total traffic flow on rural sections in 1946 exceeding the volumes in corresponding months of 1941 in seven months — January, February, March, April, September, October and November—and fell slightly below the 1941 level in the other months.

"Traffic on main highways in 1946 exceeded that in any previous year. Volumes on local roads were slightly lower than in 1941 but were higher than in any other previous year. Comparisons with 1941 and 1943, the previous high and low traffic years, respectively, are as follows:

	Percentage Change from 1941	Percentage Change from 1943
Main Roads	+0.8	+72.0
Local Roads	—1.1	+58.6
All Rural Roads	+0.1	+68.1

"Traffic in the Eastern States remained at a point slightly below the 1941 level. Moderate increases in the central States, together with large increases in the western sections, accounted for the gain over 1941 for the country as a whole. The changes in rural traffic volumes by geographical regions are as follows:

	Percentage Change from 1941	Percentage Change from 1943
Eastern regions	— 9.6	+75.2
Central regions	+ 0.6	+58.1
Western regions	+20.1	+86.8

Army Accident Prevention Program

by ROBERT S. HOLMES, *Member I.T.E.*,
Personnel and Administration Division, War Department

Ed. Note: (This article presents excerpts from a report prepared each month for the purpose of presenting accident experience data concerning personnel and equipment of all Army installations in the Continental United States).

AN ANALYSIS of the 575 accidental deaths to personnel assigned, employed, or stationed at Army installations in continental United States during a twelve months' period indicates that 350 (61%) involved the individual as a driver, a passenger, or a pedestrian in a *motor vehicle accident.*

Motor vehicles constituted the greatest single source of off post, off duty (pass, leave, furlough, or AWOL) accidents—7 in each 10. Although consideration must be given to the fact that these deaths are sustained at times and places and to personnel not easily controllable by military authorities, the fact that they comprise the majority of Army non-combat fatalities emphasizes their importance to the Army Accident Prevention Program.

"Jeep" Most Often Involved

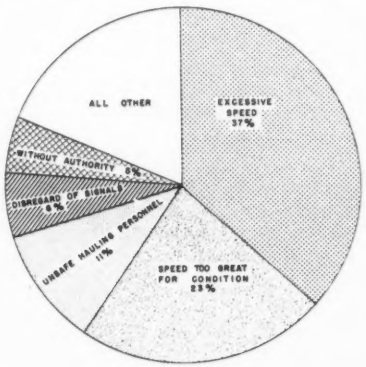
Of the 114 motor vehicle fatalities which occurred on post, and on assigned activity off post, 31 involved the "jeep" making this vehicle the greatest single source of all Army fatalities. Almost 60 per cent of these 114 "controllable cases" were attributed to speeds in excess of posted limits or speeds too great for conditions: Other major driver violations were "unsafe hauling of personnel," 11 per cent; "disregard of signals," 6 per cent; and "unauthorized use of vehicles," 5 per cent.

The distribution of these 350 motor vehicle fatalities by driver, passenger, and pedestrian is almost identical for "off post" and "on post" operation. Except for the 35 per cent wherein he was the passenger, the soldier was in control of the situation; that is, in 55% he drove the vehicle, and in the remaining 10 per cent was a pedestrian in the path of a moving vehicle.

Education, Enforcement, Engineering Needed

Experienced civilian Safety authorities have been attacking the national problem through the medium of the 3 "E's". These measures of civilian traffic control are equally effective for military usage. Military installations in this country are in fact urban centers and communities.

The "on post and on assigned activity off post" fatalities were analyzed



MAJOR DRIVER VIOLATIONS
·114 MOTOR VEHICLE DEATHS

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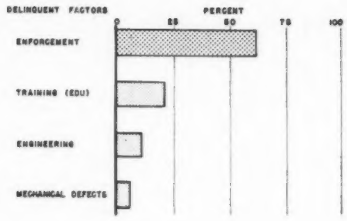


VEHICULAR DEATHS
ON POST AND ON ASSIGNED ACTIVITY OFF POST

according to the three E's of motor vehicle safety. The analysis indicates that intensified training would help to eliminate 2 of each 10 vehicular fatalities. EDUCATION, primarily accomplished during the driver testing and training program, will help to (1) screen out incompetent drivers; (2) serve as a basis for remedial training and corrective measures; (3) assist supervisors in classifying and assigning drivers; and (4) serve as a single-standard basis on which to issue operator's permits, emphasizing safe operation of vehicles, knowledge of traffic rules, and safe driving procedures.

The control of the behavior of the trained driver — enforcement — is of equal importance and would help reduce the toll by 62 per cent. Training shows the driver how to drive a vehicle efficiently and safely; enforcement assures that he will continue to drive in the prescribed manner once the training period is past. It helps to expose training failures which can be corrected by prescribed remedial training methods.

Training and enforcement should be limited to the driver of the vehicle, since 12 per cent of the "on post" deaths involved pedestrians, the majority of whom were walking on the wrong side of the road, jay-walking, or disregarding signals.

The third "E", engineering, while a factor in only 1 of each 10 motor vehicle fatalities on posts, is so closely allied with training, development of traffic rules, and enforcement as to require its consideration in a well balanced motor vehicle accident prevention program.

1946 Auto Registrations

Passenger car registrations for 1946 will be approximately 27½ million, or 2,100,000 greater than 1945 and will be the largest in history with the exception of the peak year 1941 when 29,240,475 cars were registered.

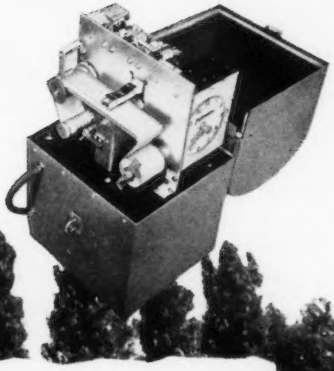
Truck registrations as of the end of 1946 will have reached an all time peak of about 5,600,000, passing the previous peak year of 1941 by approximately 700,000.

These registration statistics result from the annual survey conducted by Automotive and Aviation Industries magazine for the purpose of forecasting total motor vehicle registrations.

Northwestern University Opens 34th Police Course

The 34th semi-annual traffic police training course for city, county and state police and highway patrol officers opened April 14th at Evanston, Illinois. The 100-hour course deals primarily with police traffic control but also acquaints students with other elements of control and their relation to police activity. Subjects included accident investigation, records, education, vehicle inspection, driver licensing and traffic engineering as well as police organization and administration. The course closes May 2, 1947.

ARE YOU PLANNING AHEAD?



Many state, highway and county engineers are not only "planning ahead" for the construction of new highways and streets, but have already, through the aid of Streeter-Amet Traficounters, made extensive surveys . . . and are ready to put into operation a complete construction program, as soon as facilities and materials are available.

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Interstate Highways

by THOS. H. MACDONALD, *Hon. Member I.T.E.*
Commissioner of Public Roads

Ed. Note: The following article represents a condensation of a talk given by Mr. MacDonald at the 29th Annual Meeting of the North Carolina Society of Engineers at Raleigh, North Carolina—January, 1947.

THE conception of an interstate system of highways is a logical outgrowth of the concentration of traffic on a limited mileage of major roads. This is a national rather than a local characteristic. It was acutely apparent during the war. It is factually confirmed during peace times. So the idea of an interregional, or legally an interstate, system of roads, was a logical conclusion when, through the State-wide planning surveys, the fact was established that a national system of about one per cent of our public road mileage could be selected having a potential service totaling 20 per cent of our rural highway traffic.

Interstate highways should be planned for development as controlled access highways, if and when the traffic requires that type of design, but there are many miles of highways and city streets which should be designed as controlled access facilities quite apart from their relation to the interstate system. This class of highways has a service potential so important, and in limited mileage occupies so important a place in the solution of acute local problems, that the application of the design principles should not wait upon, what must necessarily be the slow realization of a complete improvement of the interstate system.

Design Characteristics

From the earliest beginnings certain characteristics distinguished the controlled access highway. Foremost is the provision for access, or exit, at predetermined locations, with the design arranged to feed traffic into the main stream directionally. Cross traffic at grade is eliminated.

Width of right-of-way should bear some relationship to the value of the land. Where frontage roads are to be constructed, in addition to the through traffic lanes, about 300 feet is a desirable minimum, but the width need not and should not be arbitrarily fixed. Where heavy cuts and fills are involved, there should be sufficient right-of-way for flat slopes to decrease hazards and cost of maintenance. Variable-width landscaped areas between opposing pavement, and on roadside as well, are pleasing designs. As far as the individual driver and passengers are concerned, a controlled-access highway having a minimum of protective width and a minimum of median is only one step better than the heavily traveled, non-protected highway. On the other hand, the median width should not be so wide as to burden administration with high maintenance costs.

It is a serious error to design long stretches without varying the width of the median strip, the alignment and gradients of the opposing roadways. If an exact, never-changing cross-section is used, the flow of the multiple parallel lines impacting upon the driver's vision becomes hypnotic. Such a de-

sign is deadly monotonous and results in fatigue and drowsiness. The opposing roadways may each follow the topography on independent grades, and swing outward to the limits of the right-of-way, and again inward with a profitable return in construction costs and a much more pleasing effect.

Capacity Cost Comparison

Very naturally, the first reaction of the highway official is that highways of this class are too expensive. This results from our thinking in terms of cost per mile rather than cost measured by vehicle capacity per lane per hour.

One well designed four-lane expressway will carry the same number of vehicles at nearly double the average speed as five 40-foot-wide ordinary city streets on which parking is prohibited, and under favorable control of cross traffic from intersecting streets. Under unfavorable conditions eight 54-foot-wide city streets would be required to carry the same volume of traffic that may be carried by a single four-lane controlled-access highway. These comparisons are so startling that many well-informed engineers will not easily accept them. They will doubtless accept, as a fair measure to use in cost comparisons, the proven lane capacity per hour rather than the per mile cost without qualification as to capacity per hour. The per-hour capacity is all important in meeting the problems of urban congestion, because it is the normal pattern of morning and late afternoon periods of peak traffic which ties our arterial streets in knots.

Legal Aspects

The opening of new points of entry, sometimes at short intervals, is only one of the demands frequently made by the owners of adjacent property. Another is the establishment of service stations and roadside markets, which providing no space for customers, lead to parking upon the traveled roadway itself. The loss of safe capacity of our major highways from those and similar causes is also recognized in the Federal highway legislation of 1944. Before planning a highway of this character, proper legislation must be secured to safeguard the investment. There is no idea of not permitting adequate service to the land adjoining. Actually, this is much better provided by local service roads which are brought into the through lanes of travel at selected intervals where safe provision is made for the traffic entering or leaving.

Factual Surveys Govern

From this discussion it will be seen that controlled-access roads are not necessarily confined to the interstate system. Conversely, there is a large percentage of the mileage that will constitute the system on which the volume of traffic will not require standards necessitated by high volumes of traffic. This is only another way of saying that the principle of engineering design and of sound planning based on factual surveys, will govern the improvements as they are undertaken, and not some arbitrary determination.

The report on Interregional Highways was issued under authority of the National Interregional Highway Committee appointed by President Roosevelt in 1941. On the basis of recommendations made in the latter report, Congress, in the 1944 Federal highway legislation, authorized the selection of a system of interstate highways not exceeding 40,000 miles. In the selection of the system the same plan has

been followed that has prevailed since the establishment of the Federal-aid highway system following the Act of 1921. The recommendations of the State highway departments have been sought, and the Public Roads Administration has been acting as the coordinating agency. The States have been generously helpful. There have been so few instances of failure to agree between the States that these are negligible. As of the present, about 37,000 miles are agreed upon, of which 2,800 miles are in urban areas. There are only a few rural routes of any consequence whose determination is now pending. These will soon be settled and the system officially established.

Policies of Improvement

This is the current status. But what will be the policy as to the improvement of the system? Perhaps, first, the question is pertinent as to why we need this system. Based on prewar traffic data, the 37,000 miles of the system were carrying upwards of 100 million vehicle miles daily. Now the total is substantially greater. In eleven States the average daily traffic was above, in some of these far above, the safe capacities of the conventional two-way road. Four more States are rapidly reaching this status. Moreover, these are States in which the particular routes were among the earliest improved, with the characteristic poor alignment, short sight distances and excessive grades. Thus, a major rebuilding program is inevitable. Standards reasonably uniform between the States are needed. This is one ruling reason for the establishment of the system. During the war we experienced the essential service of our highways, but we found the required services were Nation-wide, and not confined to any group of States. National services for peace times as well as for emergencies requires an adequate National system. The proposed system has been carefully scrutinized by the War Department.

Urban Volumes Enormous

But the most compelling reason is the fact that these major routes are piling enormous volumes of traffic into our cities, large and small, and adding congestion to already over-filled streets and over-crowded parking facilities. The need to plan and to get under way the urban distribution and terminal facilities is paramount. Our traffic studies show that the purely urban traffic has an influence extending radially from six miles to 30 miles outward from the heart of the city, the distance varying with the size. Generally, then, it is within this urban zone that the Public Roads Administration will be most interested in the development of the Interstate System, with standards that provide opportunities to use stage construction, so that as a long-term undertaking the controlled-access type will evolve where and when the traffic volume justifies. On the rural sections the main concern will be, as renewals and reconstruction of existing highways are undertaken, to make certain that the location, alinement and available right-of-way will permit future expansion to meet a growing traffic.

In summary, it is apparent there is now the need to plan and to carry out major improvements in the urban areas. Employment of the controlled-access type of design will be useful to relieve congestion and to relieve local traffic and local business of through traffic interference, but such projects will be limited in mileage. The important principle is to work toward an adequate pattern. For the major routes of the State, whether on the Interstate system or not, where replacement projects are planned, they should be so conceived that they can be added to, rather than discarded.

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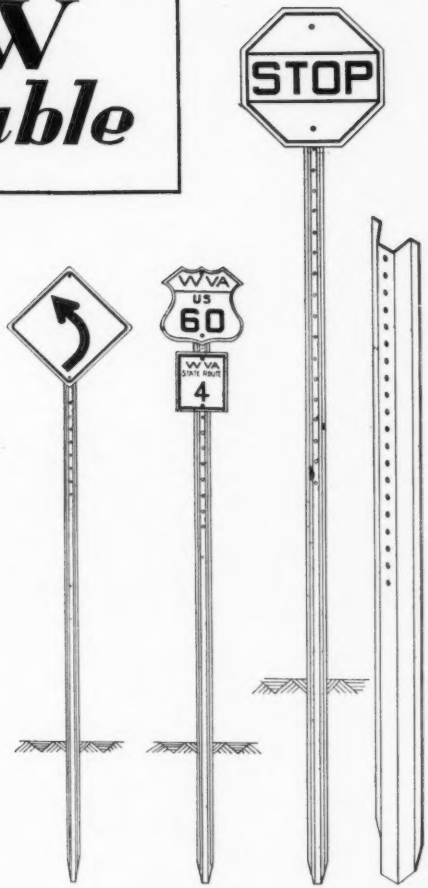

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REFLECTIVE COMPOUND

Planning the Revision of a Big City

by RALPH R. LEFFLER

Engineer of Structural Design, Sanitary District of Chicago

Even a Hollywood beauty eats, sleeps, works and sweats in a manner quite ordinary and not so glamorous. So does a Big City, for it is, after full debunking, merely an engineering device or mechanism for mitigating the effects of distance on the doings of man. During the past thirty years, it has lost practically all of its advantages over the small cities and rural areas as a place to live. The mechanical concentration and dispersion (without congestion) of persons, materials, ideas and dreams is its job,—and its only job in these days of modern gadgets. In doing its job, transportation is, by far, its main tool. The nature of the transportation varies all the way from a pedestrian on up to a mule-hauled vehicle, diesel locomotive, automobile, truck, boat, bus, streetcar, subway, newspaper, telephone, telegraph, radio, television, etc., etc. Therefore, in planning the revision of an existing Big City, transportation requires first consideration. Rubber-borne traffic deserves and should demand most, or almost all, of this first consideration.

Central District is Hub

For maximum engineering advantage and efficiency, the transportation must primarily focalize to THE Central Business District. Then, as a vital but secondary matter, the various subcenters, must be interconnected to each other as well as to THE Central Business District. The Central Business District as the hub must be subordinated in no degree, for it is in this hub that there is the greatest mechanical capacity for a Big City to function to its utilitarian purpose—to concentrate and disperse (without congestion) persons, materials, and ideas.

To the enhancement of the mechanical efficiency of the Central Business District every device and all energy should be directed. Parks, esplanades, etc., are out of place in the middle of the Central Business District. A proper location for a few of them is along or near the edges of the Central Business District; as, for instance, Grant Park, in Chicago.

Planning Starts with Center

Planning the revision of an existing Big City should start in the Central Business District. Of course, as long as pavement-minded engineers and their public officials dominate the revision of the Big City there is no likelihood that the revision will start in the Central Business District, for there will be few or no luscious pavement contracts in the work of revising or upbuilding the Central Business District. The needed revision of the Central Business District must provide easy going for rubber-borne traffic. That means, in my opinion, little new pavement. It means:

(1). Two-deck elevated highways (on columns) on about every third street, forming an accumulating and distributing grid for the radial expressways. The upper deck is to be 3 lanes wide and is mainly for the autos of the customers of the Central Business District. The lower deck is to be 2 lanes wide and is mainly for the workers in the Central Business District, as riders

in buses. The supporting columns will not seriously affect traffic on the street level for that traffic will then be largely pedestrian; certainly a desirable objective.

(2) 25 foot set-backs (or their equivalent) on all new buildings at about 31 feet above the street-level. Ample space for parking will be obtained on the roof of the set-back and in the 2nd, 3rd & 4th stories of existing and future buildings.

Anything (such as a jumble of street-surface trams to peripheral garages with its childish appeal) which is less than this combination of elevated highways and *building set-backs and floors as parking areas* will disastrously affect the efficiency of the mechanistic working of the Central Business District now and in the future.

Pretty Pictures

Today most of the city planners give first consideration to the fascinating dream of a group of lovely communities. In so doing, they insidiously appeal with pretty pictures to infantile intelligence. It is an old, old trick of high pressure salesmanship. It subordinates out of primary consideration the vital engineering and bread-earning purpose of the Big City of today and tomorrow as distinguished from the Big City as the best place in which to live before the advent of rubber-borne traffic, the radio and other modern gadgets.

The enchanting idea of converting an Existing Big City into a group of lovely communities should receive consideration in planning the revision

PARKING QUESTIONNAIRE RESULTS

A questionnaire was recently sent out from the Hartford, Conn., Chamber of Commerce by Charles Upham, Jr., Traffic Engineer, to 119 cities, requesting information on municipal parking facilities. The results, received from 92 cities, are shown herewith.

1. Has your municipal government acquired land or diverted city-owned land expressly for the purpose of increasing or enlarging parking facilities?

Yes	37	No	55

2. If so, what is the method of acquiring this land?

Condemnation	7	Open Purchase	19
Other	4	Conversion of city-owned land	14

3. If the city acquired the land, is it leased or sold to the parking operator or is the parking facility municipally operated?

Leased	11	Municipally Operated	22
Sold to Operator	0	Free Access, No Operation	3

4. Please state the principles of the agreement between the municipality and the operator.

City leases to operator and operator maintains land	7
Operator maintains land. City receives percentage of receipts	2
Monthly lease, competitive bidding	1
Leased to an association on non-profit basis	1

5. If a private corporation was created to operate the venture, was the corporation formed and financed locally or by a national specialty house? If the latter, please give the name.

Financed locally (either public or private)	34
National specialty house	none

of a Big City but only after the work-mission of a Big City as a transportation tool has received full and primary consideration. How well the lovely communities will fit in among the Big City's bread-winning tools of transportation will be agreeably surprising.

It seems a fact, an awful fact, that lurid head-lines, scintillating commentators, red-hot sex-appeal and massive and well-financed propaganda have so benumbed the public that it can only be sensitized into action on the low level of infantile intelligence by pretty pictures of a group of lovely communities as the primary objective of a Big City.

Surely there must be some few men, of strength, of high order of unbenumbered intelligence and of a balanced appreciation of loveliness in its proper place, who will see to it that the revision of our Big Cities will be planned with today's and tomorrow's utilitarian purpose of a Big City first in mind and the beautiful dream of a group of lovely communities not neglected but subordinated into its proper place.

Willy-nilly the Big City is engaged in a dog-eat-dog struggle to continue its existence and then to function to its purpose. The revision of the existing Big City should be planned accordingly. Planning, with alluring pictures on the low P. T. BARNUM level of infantile intelligence, must be superceded by, or at least supplemented by, planning which will enable the Big City to function unhandicapped to its utilitarian purpose, today and in the days to come.

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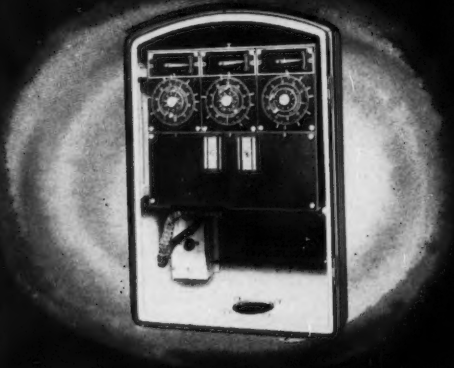

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MOLINE - ILLINOIS

ALLENTOWN BUSINESSMEN FORM "PARK & SHOP, INC."

The business district of Allentown, Pennsylvania, has parking space for approximately 2,000 automobiles at the curb and 2,000 cars on lots and garages, and serves a trading area of a third of a million people who drive—and park—65,000 cars. And recently, it seemed, they all tried to park and shop at one time. To attack this problem a group of local merchants have formed a $300,000 corporation to unravel the business section parking snarl. The new firm is called Park & Shop, Inc.

Its goal is to provide additional space for 1,000 (and eventually 3,600) automobiles within 300 steps of central city stores. Four lots have been acquired to date. Stores will stamp the parking tickets of those customers making purchases, and lot owners refund the parking fees on stamped tickets. More than half of the $300,000 has already been subscribed by ten of the larger stores, and to prove they really mean business, Park & Shop, Inc. plans to spend $10,000 a year for the next five years to sell customers the idea that it is easy to park in Allentown.

Park & Shop, Inc. didn't "just happen." The plan was launched in 1943.

Reprinted and condensed from an article by Eddie Roth, Call-Chronicle, Allentown, Pa., in the March 1947, issue of the magazine, AMERICAN CITY.

MICHIGAN SECTION ACTIVE IN CONFERENCE

Members of the Michigan Section of the Institute of Traffic Engineers played a leading role in the Michigan Highway Conference held at Grand Rapids February 25-27. Included on the 3-day program were:

Roger L. Morrison, Professor of Highway Engineering, University of Michigan; Oscar M. Gunderson, Wayne County Road Commission; B. R. Downey, Michigan State Highway Department; J. Carl McMonagle, Michigan State Highway Department.

Other speakers on the conference program were: Joseph Barnett, Public Roads Administration; A. O. Cuthbert, Engineer-Director, County Road Association of Michigan; C. J. Scavarda, Michigan State Police; Harry E. Neal, Ohio State Highway Department; and W. E. Phillips, Michigan Construction Equipment Dealers' Association.

In his talk on "Engineering Aspects of Roadside Control," Oscar Gunderson pointed out that it was not economically feasible to construct special facilities for pedestrians since they pay no part of the highway construction costs. B. R. Downey cited the importance of special training for highway flagmen in the problem of "Safety for Maintenance Crews on Highways."

J. Barnett, in his talk on "Intersection Design," indicated that the use of traffic circles was waning. He also stressed the careful placement of service drives and the use of median strips on existing roads.

The fact that only 4% of the average street highway budget was spent for traffic control devices while the other 96% is spent for instruction and maintenance, was pointed out by Carl McMonagle in his remarks on "Justification for Traffic Control Devices on Rural Roads."

The Michigan Section sponsored a luncheon meeting attended by 52 members and guests, on the second day of the highway conference. At this meeting Trooper Charles Holton, of the Michigan State Police, discussed a new intoxication test now being used by his department. Mr. J. C. Buckley, of the Michigan Good Roads Federation, gave a brief description of the work he is now doing in the state.

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6 hours, 3 nickels	3 hours, 3 nickels
8 hours, 4 nickels	So on through 10 hours
10 hours, 5 nickels	5 hours, 1 quarter
10 hours, 1 quarter	10 hours, 2 quarters

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I T E NEWS AND PERSONALS

ROBERT S. HOLMES, FIRST EXECUTIVE SECRETARY

OTHER CONSTITUTION AMENDMENTS APPROVED BY MEMBERSHIP

Robert S. Holmes assumed his duties as the first executive secretary of the Institute of Traffic Engineers April 1st at New Haven, Connecticut. His nomination by the Board of Direction followed the membership's approval of an amendment to the Constitution to provide for a full-time executive secretary. Other proposals approved by the membership were: recognition of student chapters, an additional vice president and new nomination procedures for officers.

In announcing the nomination of Holmes, Mr. Robert A. Mitchell said "it marks another milestone in the progress of the Institute of Traffic Engineers."

Holmes will bring to the Institute a broad experience in highway and traffic engineering and other related fields, including research, traffic education and public training work, police traffic control and enforcement, and traffic engineering administration. He is a graduate Civil Engineer from the Georgia School of Technology, having completed a cooperative course in 1938 by arrangement with the Alabama and Georgia Highway Departments. After receiving training in traffic engineering at the Yale Bureau of Highway Traffic, Holmes was assigned to the Special Highway Division, Pennsylvania Turnpike Commission, and later joined the Traffic Engineering staff of the National Conservation Bureau.

Holmes was separated from the service on April 17, 1946 after 62 months of service. During this entire period of duty he was active in matters pertaining to traffic engineering and control for the Army. Immediately after separation Holmes was given a Civil Service appointment as Assistant War Department Safety Director responsible for organization and administration of a motor vehicle safety program for the Army.

Student Chapters Possible

The proposal authorizing student chapters, which was approved by the recent membership ballot, provided for chapters, composed of students of schools of traffic engineering of recognized reputation. Before such a chapter is recognized, the head of the university department responsible for traffic engineering courses would have to endorse the application by a minimum membership of five students. The school must also have been in operation for five years, and provide a faculty adviser to the Student Chapter, who must be a Member of the I.T.E. In return for annual dues of $2.00 and an annual report, the chapter would receive free copies of the Proceedings and TRAFFIC ENGINEERING magazine, as well as the right to wear a special badge, attend I.T.E. meet-

ings and carry a Chapter membership card. (see story on first Yale Chapter, page 323.)

Extra Vice-President Proposed

According to proposal #3, the Institute will have two Vice-Presidents and six Directors instead of the single Vice-President and four Directors at present (The Board of Direction includes four Directors plus two most recent past presidents). Only one past president would be on the Board according to the new set up.

Nomination Procedure Changed

The nomination of officers is now changed so that every eligible voter is canvassed for nominations prior to making up the ticket of nominees. The new plan would require the nominating committee to nominate *two* candidates for each office instead of *one* or more, the existing practice.

SECTION NEWS

Washington, D. C., Section

The February meeting of the Washington Section of the Institute of Traffic Engineers was held February 27 at the Fairfax Hotel.

Twenty members and guests were present, and the evening was devoted to special activities, including door prizes and a magic entertainment by David Abernathy, followed by card games.

MEMBERSHIP ELECTIONS

The following men were elected to membership in the INSTITUTE at the February 22nd meeting of the Board of Direction in New Haven, Conn.:

NEW MEMBERS

Edward L. Cyr
Traffic Engineer—
Dept. of Public Safety
Room 403, City Hall
Newark 2, N. J.

William H. Sharp
Engineer of Highway Control
State Highway Department
Hartford, Connecticut

NEW ASSOCIATE

Mr. Robert A. Burch
Traffic Engineer
N. C. State Hwy. Comm.
Raleigh, N. C.

TRANSFER IN GRADE

From Junior to Member:
Charles W. Prisk

From Junior to Associate:
Edmund R. Ricker
James K. Gibson

PERSONAL ITEMS

George W. Barton, (Member) Consulting Traffic Engineer, Evanston, Illinois, is making a traffic survey for the city of Roanoke, Virginia. The study will analyze present and future parking demands in the downtown area and will consider changes in traffic controls.

Major Charles G. Beckenback, (Member) Cincinnati, Ohio, is convalescing from a spinal operation at Wm. Beaumont General Hospital, El Paso, Texas. Although Major Beckenback is just now encased in a plaster cast "like an Egyptian mummy" he is recovering nicely and

expects to be released from the hospital within a few months. He was first hospitalized in May at Camp Carson, Colorado.

Joseph J. Feuchter, (Member) has established offices as traffic engineer and transportation consultant under the name of Traffic Associates at 1064-65 Paul Brown Building, St. Louis (1) Mo.

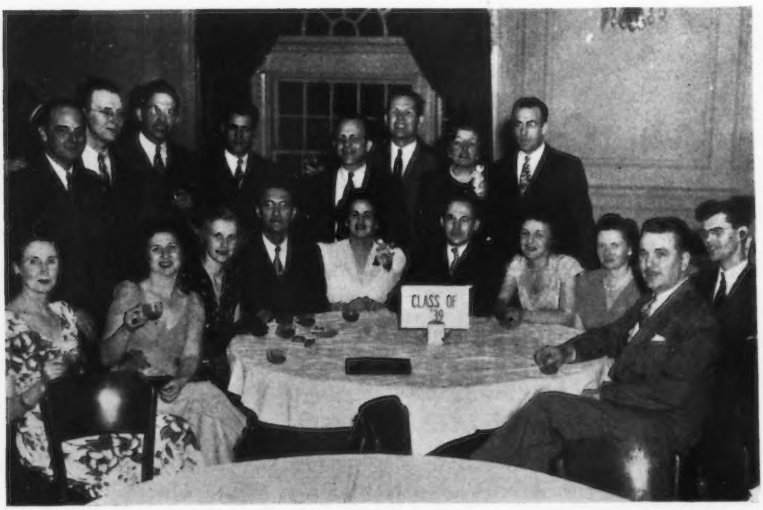
"Joe" was traffic engineer for the City of St. Louis, Mo., for several years before his army service in the traffic department of the Provost Marshall General's School and Director of Traffic of the City of Manila.

Harold F. Hammond, (Member) rendered his final report last month to the City of Wilmington on a Central Business District Parking and Traffic Survey and Plan. Assisted by Henry K. Evans, (Assoc.) of New York City, who conducted the field surveys, Hammond developed and put into a 50-page printed report, 30 specific recommendations dealing with curb parking, commercial vehicle loading zones, off-street parking facilities, parking administration, and creation of express streets.

James T. White, (Associate) Traffic Engineer, for Fort Wayne, Indiana, is now analyzing results of an extensive traffic survey in the central business district.

James Hayden, (Member) one of the ten civilian traffic engineers working with the army during the war, is now in St. Moritz, Switzerland. He reports that "skiing is excellent even though the sun is so hot that coats, gloves, etc. are not needed".

Henry Osborne. (Member) Traffic Advisor, Buffalo, N. Y., has submitted a report to the Wilkes-Barre,



1939 Class, Yale Bureau of Highway Traffic, has nearly full representation at social gathering. The event was part of two-day reunion of former students. (See story page 326).

Pennsylvania, City Council on a survey which he conducted there on December 13th and 14th, 1946, as a special consultant. The report lists a series of recommendations for the central city traffic problem and is pointed to the relief of the congestion during the evening peak hours.

LETTERS TO THE EDITOR

Dear Editor:

There is one thing which I have been thinking of for quite some time now, and I should like to know what should be done in regard to this suggestion. I have had occasion to testify in court proceedings, in hearings, etc., in regard to traffic safety aspects involved in a case or two. Upon one occasion I was asked if I was a *registered traffic engineer*. The answer to this question was negative. In this state in particular—I don't know about other states—there is no provision made for a traffic engineer to register. There are standard provisions for civil engineers, mechanical, et al, but not traffic. Now here is the suggestion, and I think it is one that would really benefit the traffic engineering profession. Why not have the I.T.E. get behind a national movement and in view of I.T.E. membership requirements, have all states recognize I.T.E. members as registered traffic engineers? This, I know, is a big project, but I think it would be of great benefit to the Institute.

Sincerely yours,

CHARLES UPHAM, JR.,
Traffic Engineer,
Hartford, Conn. Chamber of Commerce

LOOKING AHEAD

Midwest Conference

On May 5 through May 8 the Greater Chicago Safety Council is holding its annual Midwest Safety Conference. This conference covers all phases of safety including industrial, home, and public safety.

Matthew C. Sielski, (member, I.T.E.) Director Safety & Traffic Engineering Dept., of the Chicago Motor Club, has been appointed chairman of the Public Safety Sessions.

The following sessions of the program are of special interest to traffic engineers:

Tues., May 6, 1947—2:00 P.M.—
Pull Fight Room
New Responsibilities in Traffic Engineering
The Parking Problem
What About a Parking Authority
What are the Requirements for Superhighways
Panel Discussion
Chairman—Thomas J. Seburn, President, Institute of Traffic Engineers
Wayne Volk — Traffic Engineer, Wisconsin State Highway Commission
Howard Ilgner—Supt. and Chief Engineer, Bur. of Electric Service, Milwaukee, Wis.
Harry Neal — Chief Engineer, Div. of Traffic and Safety, Ohio State Highway Dept.
J. Carl McMonagle, Dir., Planning and Traffic Div., Michigan State Highway Dept.
D. Grant Mickle, Dir., Traffic Engineering Dept., Automotive Safety Foundation, Washington, D. C.
J. E. Darrell, Ass't. Traffic Engineer, Minnesota State Highway Dept.

Wed., May 7, 1947—9:30 A.M.
Police Enforcement
Sponsored by Northwestern University Traffic Institute and International Association of Chiefs of Police

Wed., May 7, 1947—2:00 P.M.
Sponsored by Chicago Motor Club Traffic Safety Session
Pres., Gen. W. E. Guthner, Executive Secretary, Illinois Safety Commission

2:00 P.M.—Protecting the Pedestrian—Burton Marsh, Director of Safety & Traffic Engineering, American Automobile Association, Washington, D. C.

Discussion — Harry Porter, Jr., Traffic Engineer, National Safety Council

3:00 P.M.—Public Safety Education—Donald Slutz

Discussion—Paul Jones, Director of Public Information, National Safety Council

3:45 P.M.—Planning a Community Traffic Program—Matthew C. Sielski, Dir., Safety and Traffic Engineering Dept., Chicago Motor Club

Discussion — Ernest H. Miller, Traffic Engineer, So. Bend., Indiana

ON THE SHELF

Traffic Accident Facts on Rural State Highways, 1946 edition, by the Ohio Department of Highways, Division of Traffic and Safety. The Department, 1946. 22 pp. processed.

Charts, graphs, etc. representing deaths, types of accidents, conditions of drivers and vehicles, conditions of pedestrians, locations of accidents, etc.

Proceedings of the Thirty-first Annual Highway Conference, held at Grand Rapids, Michigan, February 26, 27, 28, 1946, by the University of Michigan. Ann Arbor, The University, official publication vol. 48, no. 7, July 16, 1946.

Handbook of Descriptions of Specialized Fields in Electrical Engineering prepared by the National Roster of Scientific and Specialized Personnel. United States Employment Service, Department of Labor. 1945. 22 pp.

" 'Specialized fields' here refers to well-established areas of activity within a profession which differ from each other and from the basic profession in the added knowledge or skills required." Pamphlet written by engineers and designed to aid in classification, coding and placement of electrical engineers and in aiding engineers in describing their own particular skills. Contains short section on the work of the electrical engineer in traffic control.

Interstate Highways, a New Network of High-Type Free Roads for The Nation, by the American Automobile Association. n.d. 24 pp.

Graphically and pictorially illustrated pamphlet on the national system of highways planned after the investigation which resulted in the report, "Interregional Highways." The routes, now ordered by Congress to be designated, should be built within the next two decades without undue increases in motor vehicle taxation if present taxes are wisely administered and the program adequately supported, according to the Automotive Safety Foundation.

Automobile Parking in Central Business Districts, by the Urban Land Institute. Technical bulletin no. 6. 1946.

Contains current parking programs in five cities, parking regulations under zoning, parking as a public utility, state enabling legislation and municipal action.

National Transportation Policy, by the Transportation and Communication Department of the Chamber of Commerce of the United States. For consideration by the Chamber's membership at the next annual meeting. 1946. 23 pp.

Transit Fact Book, 1946, by the American Transit Association, 1946, 59 pp.

Statistical review for the year of taxes, traffic, revenues, vehicle miles, electrical power, capital and maintenance expenditures, equipment, track and route mileage, employment and payroll. Illustrated with graphs and charts.

Road Curves for Safe Modern Traffic and How to Set Them Out: a Practical Treatise on Natural Transitions, by F. G. Royal-Dawson. London, E. & F. N. Spon, Ltd. 1946.

A sequel to the author's "Curve Design." Intended for use by "all those who have to deal with the improvement of existing curves and the location of new roads." Also intended for motorists who are interested in road design and for students who contemplate making a serious study of highway engineering.

Report of Committee on Prevention of Highway - Railroad Crossing Accidents to the Safety Section, July, 1946, by the Committee on Prevention of Highway Crossing Accidents of the Association of American Railroads. 1946. 18 pp.

General discussion of all aspects of the problem, needed and possible cooperation between railroads and highway officials, public education etc. Contains a summary of grade crossing accidents for the nation for 1945 and a summary by state comparing 1945 with 1944.

QUICK FACTS

4,706,209 pupils will travel 1,913,661 miles in 81,150 school buses to 40,387 schools each day during the 1946-47 school year. The job will cost $103,428,683.

Yale Bureau and Eno Foundation Initiate Parking Study

The Bureau of Highway Traffic, Yale University, New Haven, Connecticut, has initiated a new research program on the design of off-street parking facilities. Funds for the study are being provided by the Eno Foundation for Highway Traffic Control, Inc., of Saugatuck, Connecticut.

Past studies conducted by the Bureau include the development of a medium divider for four-lane highways, development of photographic-mathematical methods for evaluating delays at signalized intersections, and the preparation of standards and survey techniques which have been published and accepted by professional organizations.

The new study will cover the design of off-street parking lots and garages, as they are affected by vehicle characteristics and the movement of traffic to and from adjoining streets. It is planned to make detailed studies of existing garages of various types and to determine the critical features which facilitate the rapid, efficient, and safe movements of vehicles in garages. It is expected that a sound engineering approach will contribute fundamental data toward the solution of the important problem of designing off-street parking facilities.

Mr. Edmund R. Ricker, a graduate of the Yale Bureau, has joined the staff and will devote full time to the parking study.

Michigan to Study Roadside Control

The need for control of the development of the roadsides along Michigan highways has been recognized by the Michigan State Highway Department and an active program to cope with this problem and encourage preventive measures before the building industry resumes its pre-war volume

has been initiated. The Roadside Control Unit of the Planning and Traffic Division will be responsible for the program of land use planning and traffic engineering as it relates to roadside control. The following items will be covered:

Discussion of land use and traffic hazard problems before groups interested in general planning, land use planning and zoning, to obtain local appreciation of the social and economic values involved.

A department sponsored and financed program to reduce roadside hazards along the principal State trunklines. Roadside enterprises with hazardous approaches will be encouraged to improve their facilities. The press and radio will be utilized.

Alternate clauses involving set-back lines and off-the-highway parking facilities, for zoning ordinances, will be presented for the consideration of local planning and zoning agencies.

Necessary records will be established to provide the materials for an analysis of before-and-after accident rates on routes improved under such a program of roadside control.

White Plains Tries Off-street Parking Meters

The New York suburban community of White Plains, (40,327) the county seat of Westchester County, has special traffic problems because some of its main streets are narrow, a number of large New York department stores have established branches there, and the city is a shopping center for most of the county and the southwestern fringe of Connecticut.

White Plains officials believe they have found one solution for their traffic problems in an experiment, begun a few months ago, with municipal off-street metered parking. Mayor Silas S. Clark declares that he thinks so favorably of the plan that he is advocating the establishment by state legislative act of a White Plains Parking Authority to rim the entire business area with meter-equipped municipal parking lots.

The mayor said the lots would require virtually no employees. They would limit parking to actual shopping time. The experimental lot has meters adjusted to accept 10 cents for two hours parking.

That the meters can be profitable was indicated by a report from Frank T. Hanlon, Commissioner of Public Safety. A pioneer in the use of meters on the curbs, White Plains derived a profit of $35,000 a year for the first five years after 1938, then suffered a set-back during rationing, but this year is collecting about $50,000 and next year anticipates receipts of $60,000. Mr. Hanlon said the 1,004 meters cost less than $1,000 a year to maintain.

The council recently voted to use all parking meter revenues for parking and off-street parking improvements. The city already owns and operates two parking lots, one of which adjoins the city hall and has been paved, marked, and metered. The land and improvements for this 96-car parking lot cost $50,000, a portion of which will be paid from parking meters on the lot, a portion assessed against the land immediately adjacent to the lot.

New Jersey Engineers Reorganize

Organizing for what is described as New Jersey's greatest road construction program, State Highway Commissioner Spencer Miller, Jr., has announced promotions and new assignments for engineers.

The changes will be effective under the recommendation of Charles M. Noble, State Highway Engineer.

C. F. Bedwell, who has long been construction engineer, was advanced to the post of chief of design and con-

struction and will serve as coordinator of the engineering functions of the entire department. His deputy will be C. A. Burn, formerly northern construction division engineer.

Harry D. Robbins, central division construction engineer, will succeed Mr. Bedwell as construction engineer and Neil MacDougall, assistant engineer of plans and surveys at the Newark office, will be central division construction engineer.

"Traffic Engineering & Police Revision" Released

The publication of an enlarged and revised edition of "Traffic Engineering and the Police" is announced by the International Association of Chiefs of Police and the National Conservation Bureau. The book, a joint publication of the two organizations, was written by Henry K. Evans, Director of the Traffic Engineering Division for the Bureau, and Franklin M. Kreml, Director of the Traffic Division of the International Association of the Chiefs of Police.

The book explains traffic engineering techniques employed by police and detailed methods of attacking problems of traffic control and hazards. It treats with signs, signals, markings, buses, parking, publicity, and traffic studies. The book constitutes a reference work for all persons in the street traffic field.

There are 8 chapters in the expanded edition: Organization and Equipment, Hazardous and Congestion Intersections, Remedies for Intersection Problems, Congested Business Districts, Residential and Arterial Streets, Traffic Studies, Handling Special Events.

The new edition of "Traffic Engineering and the Police" contains 104 pages, with 108 illustrations, and may be purchased from either of the sponsoring organizations. Special prices are offered to students.

I.T.E. STUDENT CHAPTER FORMED AT YALE

The formation of an ITE Student Chapter at the Bureau of Highway Traffic, Yale University, is announced by the Board of Direction.

Formed under provisions of the recently amended Article IX of the ITE Constitution, the Chapter, with 20 members, is the first to be authorized since adoption of the amendment.

Officers elected at the first meeting on February 24th were: Robert E. Schmidt, Buffalo, N. Y.—*President;* Edwin C. M. Lee, Honolulu—*Vice-President;* and George A. Hill, Oakland, California—*Secretary-Treasurer.*

Fred W. Hurd, (Member ITE) will act as Bureau faculty adviser to the group. The student chapter will attempt, as part of its objectives, to secure speakers on topics of interest to traffic engineers, and to acquaint members with existing opportunities in the field of traffic engineering.

Other members of the Student Chapter are:

Roger T. Chandler
Webb J. Crecink
David Dabney
Earl Flynn
Jerome Franklin
H. Dean Fravel
J. L. Holley
John H. Hulse
A. L. Hutchison
Herbert J. Klar
Emrys E. Lewarch
Capt. Edwin L. Mills
S. T. Siegel
Richard Strickland
Arthur M. White
James R. Wichman
Murray Zides

New Speed Meter

The automatic Signal Division, of Norwalk, Connecticut, has announced the development of an Electro-Matic Speed Meter, which gives instantaneous, direct readings for the speeds of single approaching vehicles.

The instrument is in three parts, a Transmitter-Receiver Unit, an Indicator-Amplifier Unit and a Power Unit. The Transmitter-Receiver Unit is located near the roadway adjacent to the vehicles to be detected. The other two units may be placed nearby at the convenience of the operator.

The speed meter "utilizes microwave, radio frequency radiation beamed at the advancing or receding vehicle in the operating zone and reflected back from the vehicle to the Transmitter-Receiver unit. The true speed of the vehicle is read directly on the scale of the Indicator-Amplifier unit. Provision is made for the connection of a graphic recorder if desired."

Cities Plan Cross-Town Expressways

Three cities plan to meet their traffic congestion problem by construction of broad expressways through the hearts of their business districts according to the American Public Works Association.

In Ft. Wayne, Ind., federal and state highway experts have cooperated with the city in developing plans for a $27 million superhighway program. Completed plans call for channelizing five main highways entering the city from the north into one broad expressway which will pierce the business district.

In Dallas, Texas, contracts are ready for the first section of the $10 million Central Boulevard Expressway. One length of the expressway, part of the Dallas masterplan program, will consist of six lanes with two-lane service streets on either side. Federal, state, and city funds will finance the project. Dallas voters have authorized $65 million in bonds for developments under the masterplan.

A new expressway system for Providence, R. I., was recently approved by the city plan commission. The city's thoroughfare masterplan calls for four arterial routes to handle cross-town traffic and two concentric superway belts girdling the metropolis.

ANY OLD COPIES?

I.T.E. headquarters, 212 Strathcona Hall, New Haven, Conn., needs back copies of TRAFFIC ENGINEERING magazine. A plea is made to members and subscribers to check their libraries for extra copies . . . . especially previous to 1942.

E. W. Ellis Leaves Ohio State Highway Department

Edison W. Ellis has been appointed Executive Vice President of The Dual Parking Meter Company of Canton, Ohio, according to an announcement by Dual's Board of Directors.

Mr. Ellis was Assistant Director and Chief Engineer in the Ohio Department of Highways for two years prior to his new appointment, and has had extensive experience in the engineering and consulting engineering fields.

A graduate of Ohio Northern University, he taught engineering in the University's College of Engineering

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(a) *The state or condition of being safe!*

(b) *Freedom from danger or risk.*

Does Your Present Sign Equipment Offer Safety TO YOUR MOTORISTS AT ALL TIMES?

Check these conditions and see!

- ■ Do your present reflectorized signs black out?
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- ■ Does dirt or road film cut down their reflective qualities?
- ■ If your reflective signs are defaced can you repair them on the spot, or must they be completely dismantled and brought in for refinishing?

You must concern yourself with ALL THESE SAFETY FACTORS, when buying signs to protect your motorists. PRICE alone is no factor where the lives of so many depend on your judgment for safe highway equipment.

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- ■ **Maximum efficiency under all weather conditions!**
- ■ **Maximum concentrated reflecting power!**
- ■ **Maximum dependability from best engineered construction.**
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before entering the Ohio State Highway Department.

In announcing Mr. Ellis' appointment, Dual officials stated that wartime regulations stopped manufacture of parking meters, and material shortages since war's end have delayed maximum production. With installation of improved production facilities, and the expectation of more plentiful materials, Dual officials predict increased output for 1947 and fulfillment of a large backlog of orders.

Traffic Engineering Training at Cornell and Brooklyn Institute

Two cases of increased opportunity for traffic engineering training were announced recently. A two-week course in Basic Traffic Engineering Studies was offered by Cornell University, March 3-15. For the first time since before the war, two special classes, Traffic Engineering and Economics of Highway Engineering, were resumed at the Polytechnic Institute of Brooklyn.

The Cornell course was conducted by Taylor D. Lewis, (Assoc.-I.T.E.). Both Brooklyn classes are evening classes under the direction of H. H. Hemmings, (Member-I.T.E.). The Brooklyn course in traffic engineering was formerly handled by Dr. Bruce Greenshields.

In Mr. Hemmings' course on the economics of highway engineering, consideration is given to highway calculations; allocation of funds; earth work and sub-grade preparation; location, grades, and other road elements; cost of motor vehicle operation; loss of time due to congestion and delay; elimination of grade crossings; influence of accidents upon design; toll and free traffic; common and contract carriers.

The Cornell studies were designed to cover the standard traffic engineering approaches to problems of accident prevention, relief from congestion, elimination of delay, and solutions of normal parking demand, the preparation and planning necessary prior to a traffic survey and standard methods of collecting traffic information.

Yale Bureau Holds First Reunion

Sixty-four of the one hundred and seventy-two former students of the Yale University Bureau of Highway Traffic attended the Bureau's first reunion and seminar on February 20th and 21st at New Haven, Conn. Graduates of former classes came from 15 states, the District of Columbia and Canada, to attend the two-day meeting. The program was planned to include social activity as well as the technical seminar sessions.

Included in the technical discussions were: (1) State-City Relationships in Traffic; (2) Effective Application of Engineering to Highway Traffic; and (3) Future Developments in the Traffic Field. The classes of 1939 and 1941 had the largest representation, with 9 men from each class in attendance.

Judge C. W. Phillips, President, American Association of State Highway Officials, and Robert A. Mitchell, Vice President, Institute of Traffic Engineers, addressed the graduates at the Friday luncheon.

Judge Phillips emphasized the importance of sound traffic values in the making of administrative decisions in highway departments. Judge Phillips said, "There is a vast chasm between administrators and engineers", in citing the need for training of engineers for administrative positions.

Mr. Mitchell traced the development of the traffic engineering profession and emphasized the growing interest in traffic engineering work in cities. Others present at the luncheon were Pyke Johnson, President, Automotive Safety Foundation; Samuel W. Dudley,

Dean, Yale School of Engineering, Charles J. Tilden, of the Yale Committee on Transportation, and Maxwell N. Halsey, Executive Secretary, Michigan State Safety Commission, and former Associate Director of the Bureau.

Plans are already going forward to make the seminar an annual event. "It is hoped", said Mr. Matson, Director of the Bureau, "that it will become an increasing interest and value to all former students of the Bureau."

Preview of 1946 Accident Facts

A condensed edition of "Accident Facts" for 1946 was announced by the Statistical Division of the National Safety Council.

This condensed edition, containing preliminary figures for 1946 accident totals, is designed to meet the demand for information prior to the regular July release date of "Accident Facts." The preliminary edition can be obtained from the Council at 10 cents per copy.

ILLINOIS CITIES CONSIDER TRAFFIC-EASING PLANS

Officials of the cities of Rock Island, Moline and Peoria, Illinois are considering traffic improvements involving expenditures totaling more than $21,000,000.

Plans to provide an east-west 4 and 6 lane highway through Rock Island and Moline, and for four north and south feeder roads from the outskirts of Rock Island, Moline and East Moline, at a total estimated cost of $4,400,000 were revealed at a recent meeting of the Rock Island County Board of Supervisors.

The county road program replaces, to a large extent, a group of projects reported at the July meeting of the board, some of which have been eliminated. The new plan is being considered by the county and state aid road committees and will involve a bond issue.

The chief project in the group proposal is the paving of an inter-city route in the cities of Rock Island and Moline, beginning at Eleventh Street and Twenty-first Avenue, Rock Island, then north to Seventh Avenue; then east on Seventh Avenue to Thirty-fifth Street.

Peoria's Plans

H. W. Lochner, president of Lochner Co., Chicago, Illinois, on the basis of a traffic survey of the Greater Peoria area, outlined to officials from Peoria, East Peoria, Peoria Heights, and Bartonville plans in a rough draft stage for a $17,000,000, 20-year, traffic project. Included in such a plan would be a new downtown bridge, in line with Walnut Street, over the Illinois River just south of the two present bridges, to cost approximately $5,800,000. This proposed bridge would reduce downtown traffic 35 per cent, compared with only an estimated ten per cent reduction at another proposed site also studied. It was found that 55 per cent of Peoria's downtown traffic is "through" traffic.

Street improvements under the program would involve widening West Washington Street through the industrial section of East Peoria at $2,100,000, officials said.—*Engineering News Record, Dec. 26, 1946.*

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